

CONTEXT

The European Commission's Directorate General for Health and Consumer Protection (DG SANCO), established in 1999, provides a guidance document on analytical quality control and validation procedures for pesticide residues analysis in food and feed. This document defines good practices for all the different steps of the analysis of pesticides but also some commodity groups.

BIPEA'S PROFICIENCY TESTS

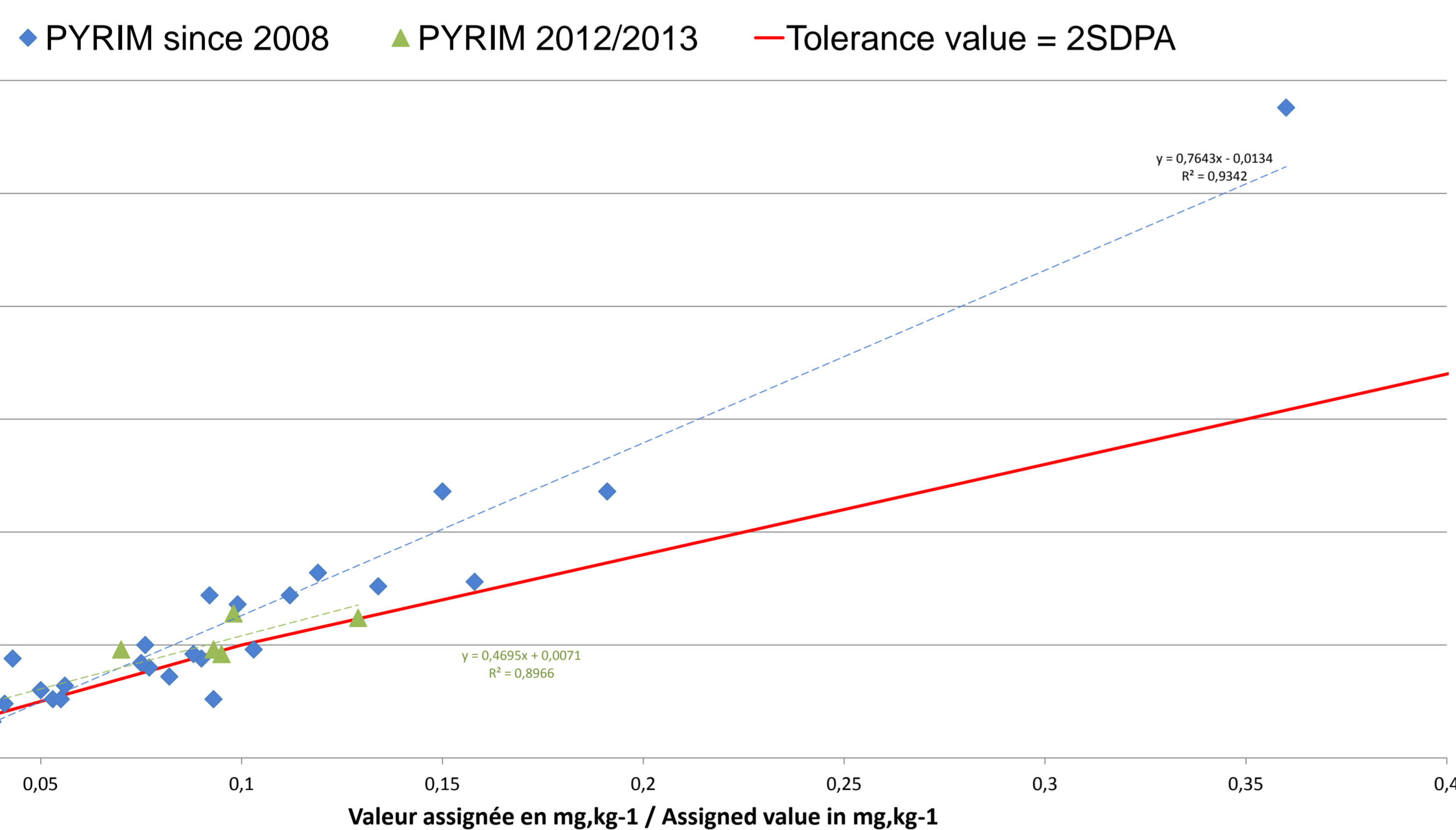
In order to help the laboratories to meet these requirements, Bipea provides proficiency tests (PTs) for pesticides determination in a large range of products (through six families of products). Some of these tests are based on a defined list of pesticides (at least 30) and some others are blind. Bipea manages all the steps of the comparisons, from the production of the samples as close as possible to those laboratories are used to receive to the treatment of the data. Some results of our twenty-five year experience are presented below.

RESULTS

From the results of the previous tests, all products together, dispersions graphs, representing twice the robust standard deviation as a function of the concentration, can be plotted. It enables to establish trends and to set up a determined SDPA (standard deviation for proficiency assessment) for next rounds.

Figure 1: graphical illustration of the dispersions of pyrimiphos-methyl since 2008

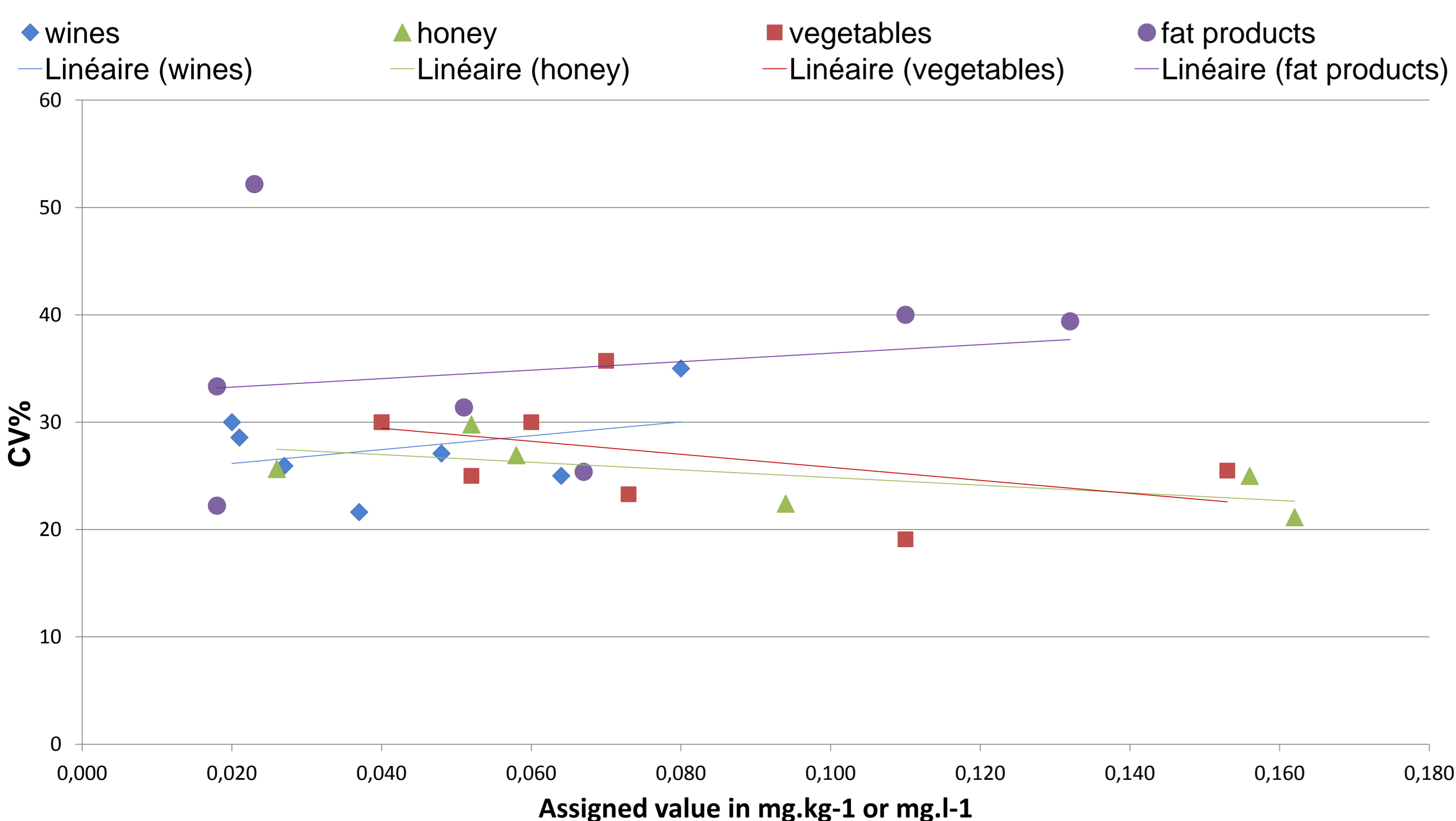
PYRIMIPHOS-METHYL - PYRIM



Differences of results between the products are also studied, which can reveal some extraction issues by the laboratories for some products and also help to improve the production of some samples.

Figure 2: dispersion of the results for chlorpyrifos-ethyl by products family

CHLORPYRIPHOS-ETHYL



CONCLUSION

These multiple and various PTs allow the whole profession to improve as shown in figure 4.

DETERMINATION OF THE ASSIGNED VALUES

One of the first issues has been to establish assigned values as relevant as possible. As laboratories for all around the world take part, not always familiar to analyze all the matrices, the assigned values is supported by the theoretical spiking values. This spiking is performed on organic products for which a screening is first performed. Nevertheless, due to stability reasons, interaction with the matrix and so on, it is not possible to rely only on the spiked value. However, this spiking value is used to define an interval into which results will be taken into account to estimate the assigned value. This allows for example to remove laboratories with poor recovery rates and avoid these results to give a bias to the assigned value. Consequently, the assigned value is often a little higher and closer to the spiking value, compared to the robust mean.

PTS 19a	Pesticides in fruits and citrus fruits
PTS 19b	Pesticides in cereals
PTS 19c	Pesticides in vegetables
PTS 19d	Pesticides in fat products
PTS 19f	Pesticides in wines
PTS 19g	Pesticides in honey

Figure 3: graphical representation of spiked, assigned and mean values obtained for lindane in 2012-2013

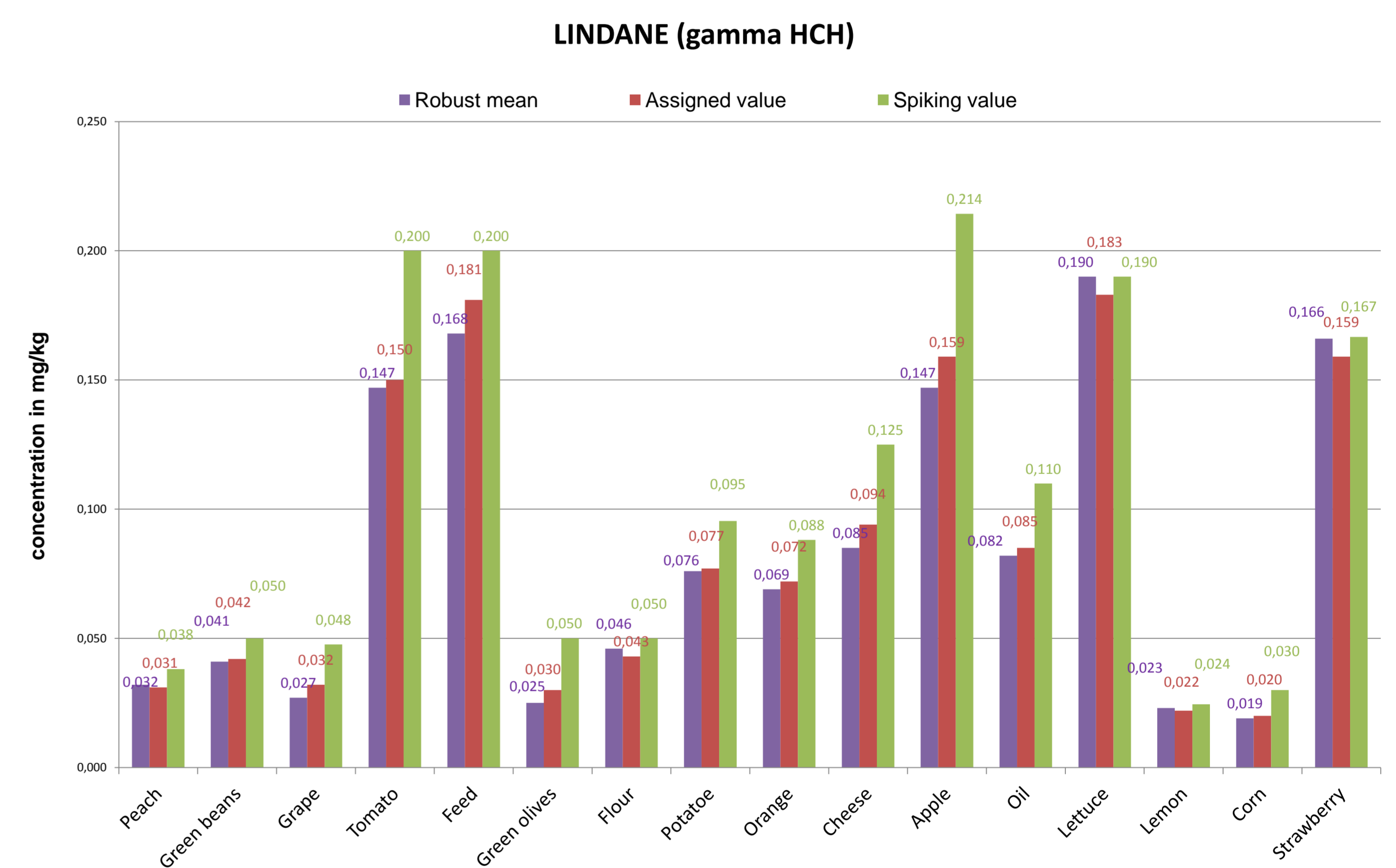


Figure 4: Evolution of CVs% of Acetamidrid since 2005

Coefficient de variation of Acetamidrid through time

